

The Monitor

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The Newsletter of the ETV Advanced Monitoring Systems (AMS) Pilot

Note to Vendors

The AMS pilot is currently scheduling verification tests for optical open-path air monitors, ambient fine particulate monitors, and portable water analyzers.

Stakeholders recently suggested the following technologies to be considered for future verification testing:

Air

Real-time, ambient monitors that speciate air toxics/carbonyls

Ambient monitors for diesel particulates

Mercury monitors (continuous and species)

Personal and behavioral monitors (for physiological parameters such as heart rate, breathing rate, blood oxygen) to measure reaction to pollutants

Water

Flow measuring devices

Probes/multi-probe systems, effective in sediments as well as in the water column

Global positioning system equipment (hand-held devices that identify sampling locations)

Technologies for detecting bacteriological and pathogenic threats to human health.

Monitoring Technologies: Regulatory Update

At the Fall 1999 meetings of both the air and water stakeholder committees for the AMS pilot, presenters described the current status of regulatory issues and stakeholders suggested technologies for future verification tests (see box at left). Here's a synopsis of the regulatory discussions:

Air – The U.S. EPA is planning to establish 300 sites for PM_{2.5} monitoring around the country. (PM_{2.5} are fine particles, less than 2.5 micrometers in diameter, that are of special concern because they can be inhaled deeply into the lungs.) Fifty of the sites are EPA-required and -operated trend sites and the additional 250 sites will be state-operated. The 50 EPA sites, all to be operational by the end of 2000, will have continuous monitors and will be located in cities with populations of greater than one million. The states will determine where their 250 sites will be located and what will be monitored. There will also be four to eight "super sites," where different types of samplers will be used.

EPA is focusing its monitoring efforts on MACT (Maximum Achievable Control Technology), to look at the residual risks of pollutants in communities; particulate mass monitoring from sources measuring air toxics in urban areas; mercury emissions monitoring; and low-level nitrogen oxide emissions.

Water – EPA continues to develop methods for analyzing contaminants in water, including methods for determining metal species and organo-metallic species, which are organics linked to metal ions. In particular, EPA is investigating methods for determining selenium, tin, arsenic, and mercury species. For EPA's Office of Water regulations, biological methods are being developed or validated, including methods to support detection and regulation of pathogens in groundwater, surface water, drinking water, and waters used for recreation.

EPA has approved whole-effluent toxicity test methods that make use of standardized freshwater, marine and estuarine fish, invertebrates, and algae to directly measure acute and short-term chronic toxicity. The agency will also be conducting a national study of chemical residues in fish tissue.

Upcoming Events

February/March, 2000

Meeting of AMS Pilot's Air Stakeholder Committee, Denver, CO

March, 2000

Meeting of AMS Pilot's Water Stakeholder Committee, Charleston, SC

March 12-17, 2000

PITTCON 00, New Orleans, LA

June 18-22, 2000

A&WMA 93rd Annual Meeting & Exhibition, Salt Lake City, UT



Formal presentations and informal discussions highlight every stakeholder committee meeting. Shown here are Bill Telliard, EPA; Judy Chow, Desert Research Institute; and Karlyn Black-Kaley, California Air Resources Board.



The AMS pilot is one of 12 pilots in the U.S. Environmental Protection Agency's Environmental Technology Verification Program. ETV was established to accelerate the development and commercialization of improved environmental technologies through third-party verification testing and reporting of the technologies' performance. The ETV process provides purchasers and permittees with an independent assessment of the technology they are buying or permitting and facilitates multi-state acceptance. For further information, contact Helen Latham at Battelle, 505 King Ave., Columbus, Ohio 43201-2693; Phone 614-424-4062; Fax 614-424-5601; E-mail lathamh@battelle.org.

Meet the Stakeholder Committees

Two members of the AMS pilot's stakeholder committees are spotlighted in each issue of *The Monitor* – one each from the air and water committees.



Dan Noble
Water Stakeholder
Committee

Mr. Noble is vice president and director of research and consulting for Environmental Business International, Inc., in San Diego, CA, and is responsible for the company's strategic business development, consulting, and market intelligence on environmental products and services. His specialties are the water/wastewater industry, analytical instrumentation, sustainable business development, and industrial and environmental biotechnology markets.

The founding financial editor of the *Environmental Business Journal*, Mr. Noble has more than 11 years' experience in financial and market analysis and has authored numerous market research reports for the environmental industry. He provides consulting services to more than 100 industrial clients. He has B.A. degrees in biology and chemistry from the University of California-San Diego and M.A. degrees in molecular biology and science education curriculum development from the University of Oregon. Before joining EBI, he taught biology, chemistry, and environmental sciences and operated family service businesses.

His consulting assignments have varied in both topics and clients, including: principal investigator on a major U.S. EPA project to determine the size and scope of the environmental industry internationally; market analysis of the water/wastewater market for a Fortune 150 chemical manufacturer to assess market entry and growth potential for fixed film bio-reactors.



Tom Logan
Air Stakeholder
Committee

Mr. Logan has worked in the field of air monitoring for nearly all of his 33-year professional career, focusing on method development and testing issues for stationary sources. He has B.S. and M.S. degrees in chemical engineering.

He began his career with the U.S. Public Health Service, retiring in 1997 as a captain, and is currently based at U.S. EPA's Emission Measurement Center (EMC) at the Office of Air Quality Planning and Standards in Research Triangle Park, NC. The mission of the EMC is to preserve and improve air quality in the U.S., concentrating on particle and gas monitoring methods for source emissions.

His major assignments at the Center involve particle and gas monitoring methods for source emissions. Currently, he is working on a fine particulate matter method for sources that will speciate fine particulate matter in the same manner as the ambient method. He also has primary responsibilities for a number of new source performance standards (NSPS) methods, including those for particulate matter (PM), opacity, and visual determination of fugitive emissions.

ETV Ahead of Goal

EPA's ETV Program had verified 53 technologies through September 30, exceeding its goal of 50 by that date. Among all 12 pilots, 98 technologies are currently undergoing verification tests, and 202 applications for testing are pending. Verification statements and verification reports for all 53 technologies are available on the ETV web site at <http://www.epa.gov/etv/library.htm#verifications>.

Also by September 30, the AMS pilot had issued five verification reports and verification statements (for portable NO/NO₂ emission analyzers), was conducting one verification test (for turbidimeters), and was finalizing test plans for two technology categories (ambient fine particulate monitors and optical open-path monitors). Verification tests are also being planned for portable drinking water analyzers.

Optical Open-Path Monitors Testing Planned

The plans for verification testing of optical open-path monitors have been finalized by the AMS pilot. The goal of this test is to verify the performance of commercially available optical open-path monitors capable of real-time monitoring of atmospheric pollutants.

These monitors are used to provide information about the concentrations of gases present in ambient air. They can provide continuous monitoring of air quality and allow early warning of potential non-compliance conditions or emergency release situations. In contrast, "grab sample" analysis by standard methods is both time-consuming and non-continuous. The testing will involve challenging these monitors with gas samples under realistic operating conditions.

For more information about the optical open-path monitor testing, contact Jeff Myers at Battelle, 614-424-7705 or myersjd@battelle.org.